Dart Aerospace Ltd.

Date: Tuesday, 26/06/2007 8:42:27 AM
User: Linda Lacelle

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services
Job Number : 33069
Estimate Number : 11317
P.O. Number : N/A
This Issue : 26/06/2007 **S.O. No.** : N/A
Prsht Rev. : NC
First Issue : N/A **Type** : SMALL /MED FAB
Previous Run : 33069
Written By : _____
Checked & Approved By : _____
Comment : Est Rev: A 04.09.02 New issue KJ/JLM
Est Rev:B Now on Waterjet 07-06-25 JLM

Drawing Name : DOUBLER
Part Number : D33021
Drawing Number : D3302 REV B2
Project Number : N/A
Drawing Revision : B2
Material : N/A
Due Date : 15/07/2007 **Qty:** 20 **Um:** Each

Additional Product

Job Number:

Seq. #:	Machine Or Operation:	Description :
1.0	M6061T6S063	6061-T6 .063 Sheet

Comment: Qty.: 0.8093 sf(s)/Unit Total : 16.1868 sf(s) M18556 3.2372
6061-T6 .063 Sheet
Material: 6061-T6 (QQ-A-250/11) 0.063" thick
(M6061T6S.063) 12.9488
Identify for D3302-1 HB
Batch: M19326 ml 07 06 26

2.0	WATER JET	FLOW WATER JET

Comment: FLOW WATER JET
1-Cut as per Dwg D3302
Dwg Rev: B2
Prog Rev: B2
ml HB 07-06-26
2-Deburr if necessary

PTO

3.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE

ml HB 26-06-07

Comment: INSPECT PARTS AS THEY COME OFF MACHINE

4.0	QC8	SECOND CHECK

Comment: SECOND CHECK

Counted
EP 07/06/27 x20

Form: rprocess

Date: Tuesday, 26/06/2007 8:42:27 AM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** DOUBLER

Job Number: 33069 **Part Number:** D33021

Job Number:

Seq. #:	Machine Or Operation:	Description :
5.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1
	Comment: SMALL & MEDIUM FAB RESOURCE 1 Deburr break all unmarked sharp edges 0.005 to 0.010	SAD 07/10/11 (PT) SAD 07/06/28 (20)
6.0	BRAKE NC	NC BRAKE
	Comment: NC BRAKE Form as per Dwg D3302	PTO Counted SB 07/10/11 (14)
7.0	QC5	INSPECT WORK TO CURRENT STEP
	Comment: INSPECT WORK TO CURRENT STEP	Counted (PT) ED 07/10/11 (X5)
8.0	HAND FINISHING1	HAND FINISHING RESOURCE #1
	Comment: HAND FINISHING RESOURCE #1 Chemical Conversion Coat as per QSI 005 4.1	MJ 07-10-11 (05)
9.0	QC3	INSPECT POWDER COAT/CHEMICAL CONVERSION
	Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION	07/10/12 (5)
10.0	PACKAGING 1	PACKAGING RESOURCE #1
	Comment: PACKAGING RESOURCE #1 Identify and Stock Location: ST181	07/10/12 (05)
11.0	QC21	FINAL INSPECTION/W/O RELEASE
	Comment: FINAL INSPECTION/W/O RELEASE	(5) 07/10/10

Job Completion

8.10.12

Form: rprocess

Dart Aerospace Ltd.

Date: Thursday, 6/21/2007 2:29:46 PM
User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: DOUBLER
Job Number	: 33069		
Estimate Number	: 11317		
P.O. Number	:	Part Number	: D33021
This Issue	: 6/21/2007 S.O. No. :	Drawing Number	: D3302 REV B2
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: / / Type : MACHINED PARTS	Drawing Revision	: B2
Previous Run	:	Material	:
Written By	:	Due Date	: 7/15/2007 Qty: 8 Um: Each
Checked & Approved By	: KJ 07.06.22		
Comment	: Est Rev: A 04.09.02 New issue KJ/JLM		

Additional Product

Job Number:

Seq. #:	Machine Or Operation:	Description :
1.0	M6061T6S063	6061-T6 .063 Sheet
	Comment: Qty.: 0.8093 sf(s)/Unit Total : 4.8560 sf(s) 6061-T6 .063 Sheet Material: 6061-T6 (QQ-A-250/11) 0.063" thick (M6061T6S.063) Identify for D3302-1 Batch: _____	
2.0	SHEAR	SHEAR
	Comment: SHEAR Cut blank: 13.150" x 7.850"	
3.0	HAAS1	HAAS CNC VERTICAL MACHINING #1
	Comment: HAAS CNC VERTICAL MACHINING #1 Machine as per Folio FA450 and Dwg D3302 Stack of 10 Identify as D3302-1	
4.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
	Comment: INSPECT PARTS AS THEY COME OFF MACHINE	
5.0	QC8	SECOND CHECK
	Comment: SECOND CHECK	

Form: rprocess

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes (No) **DQA:** (1) **Date:** 07/06/12

QA: N/C Closed: _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B **Initial** Chief Eng	**Action Description** Chief Eng	**Sign & Date**	**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
07/06/26	#2	X1 PART SCRAPED DUE TO HAND CHANGES (D3302-1) NOT APPLIED TO DXF FROM ENG	QSI/12	Scrap/destroy and Replace fix program and notify engs.	07-06-26.	07/06/27	QSI/12	07/06/27
07/10/11	#6	2 part cracked at the bend. 4 parts were out of tolerance because had to make 2 set up because crush	QSI/12	Scrap- destroy Qty 6	SB 07/10/11	07/10/11	QSI/12	07/10/11
		Human Error check with Linda need 6 parts	QSI/12	The length way Bend is at least 0.110" of nominal	SB 07/10/11	07/10/11	QSI/12	07/10/11
07/10/11	#6	6 PARTS SCRAP BENDS ARE WRONG R-C Hammerback	QSI/12	Scrap and destroy				

NOTE: Date & initial all entries

Date: Thursday, 6/21/2007 2:29:46 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** DOUBLER

Job Number: 33069 **Part Number:** D33021

Job Number:

Seq. #:	Machine Or Operation:	Description :
6.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1
	Comment: SMALL & MEDIUM FAB RESOURCE 1 Deburr break all unmarked sharp edges 0.005 to 0.010	
7.0	BRAKE NC	NC BRAKE
	Comment: NC BRAKE Form as per Dwg D3302	
8.0	QC5	INSPECT WORK TO CURRENT STEP
	Comment: INSPECT WORK TO CURRENT STEP	
9.0	HAND FINISHING1	HAND FINISHING RESOURCE #1
	Comment: HAND FINISHING RESOURCE #1 Chemical Conversion Coat as per QSI 005 4.1	
10.0	QC3	INSPECT POWDER COAT/CHEMICAL CONVERSION
	Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION	
11.0	PACKAGING 1	PACKAGING RESOURCE #1
	Comment: PACKAGING RESOURCE #1 Identify and Stock Location:_____	
12.0	QC21	FINAL INSPECTION/W/O RELEASE
	Comment: FINAL INSPECTION/W/O RELEASE	

Job Completion

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

QA: N/C Closed: _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	33069
Description: Doubler	Part Number:	D3302-1
Inspection Dwg: D3302 **Rev:** B2		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

[X] First Article [ ] Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
13.052	+/-0.010	13.052	✓		MT	
11.350	+/-0.010	11.350	✓		MT	
0.851	+/-0.010	.857	✓		VERN	
0.851	+/-0.010	.852	✓		VERN	
7.802	+/-0.010	7.802	✓		~~ME~~MT	
6.10	+/-0.030	6.10	✓		MT	
R0.12	+/-0.030	0.12	✓		RG	
R0.12	+/-0.030	0.12	✓		RG	
0.063	+/-0.010	.064	✓		VERN	

Measured by:	B. [illegible]
Date:	26-06-07

Audited by:	[illegible]
Date:	07/06/27

Prototype Approval:	N/A
Date:	N/A

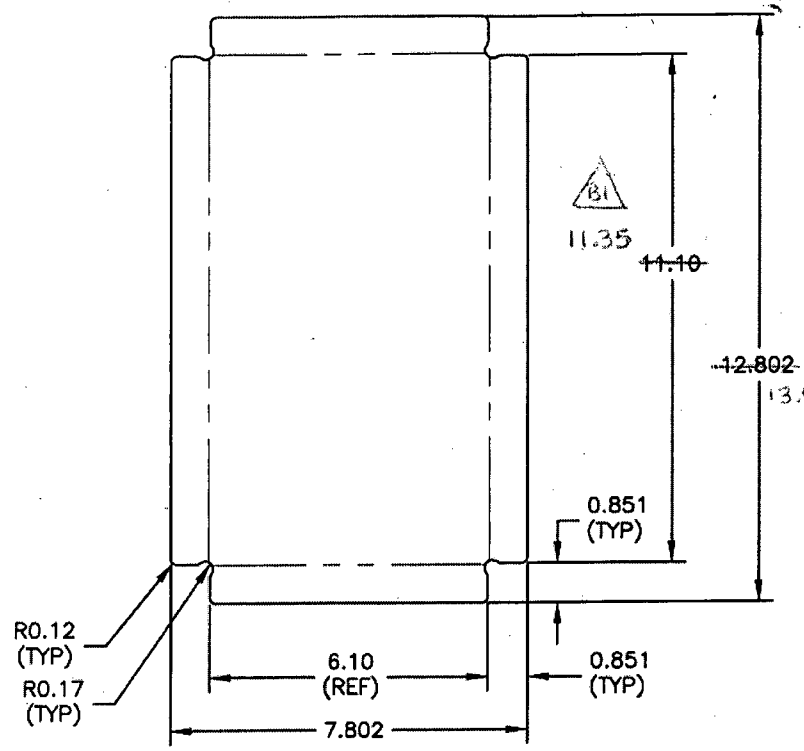
Rev	Date	Change	Revised by	Approved
A	04.09.03	New Issue	KJ/JLM	
B	05.03.04	Revised dimensions per Dwg revision	KJ/JLM	
C	06.03.09	Dwg Rev update	KJ/JLM	

DART

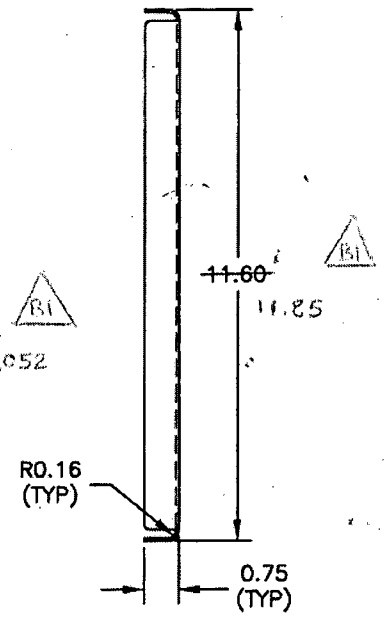
DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3302	REV. B SHEET 1 OF 4
DATE 04.11.18		TITLE DOUBLER	SCALE 1:4

A	04.07.06	NEW ISSUE
B	04.11.18	REMOVE HOLES
B1	RF 04.12.15	ADDED 0.25" TO THE LENGTH FOR -1/-3.
B2	RF 05.03.21	7.25 WAS 7.34 ; 8.952 WAS 9.042 ; 7.175 WAS 7.84 FOR D3302-3

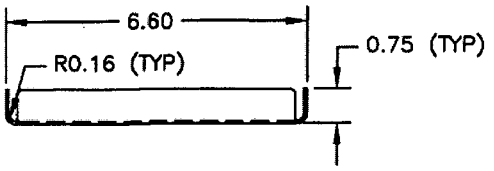
RELEASED
04.11.23



D3302-1 FLAT PATTERN



D3302-1 DOUBLER
BEND DETAIL



D3302-1 NOTES:

1) MATERIAL: 6061-T6 (QQ-A-250/11) 0.063 THICK (REF. DART SPEC. M6061T6S.063)
2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
3) BREAK ALL SHARP EDGES 0.005 TO 0.010
4) ALL DIMENSIONS ARE IN INCHES
5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
6) IDENTIFY WITH DART P/N & B/N USING FINE POINT PERMANENT MARKER

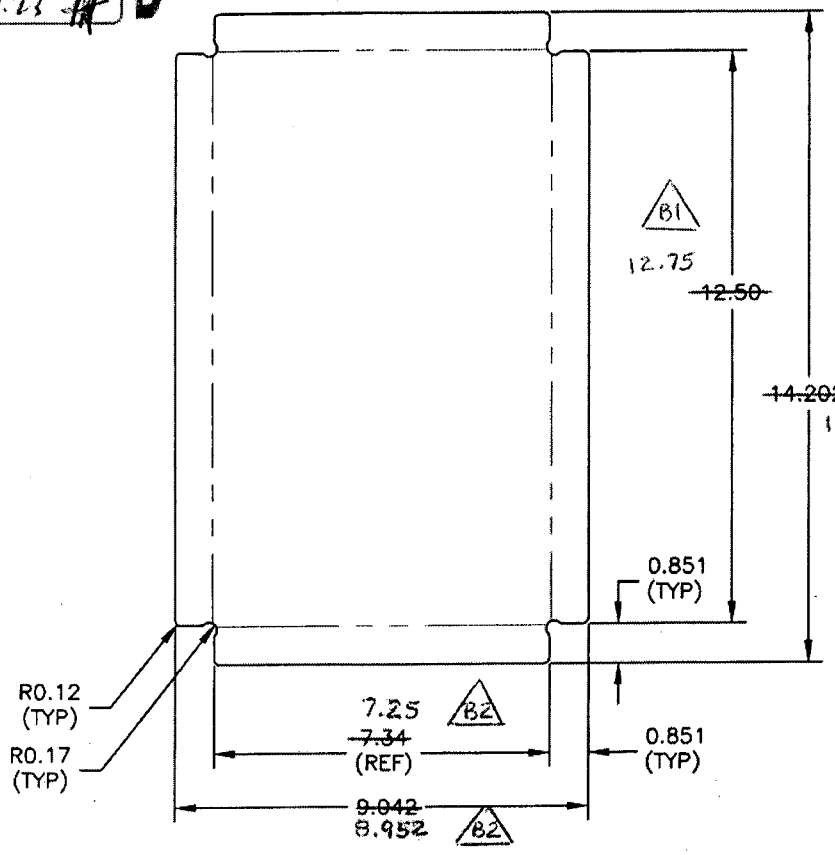
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 33069

Copyright © 2004 by DART AEROSPACE LTD

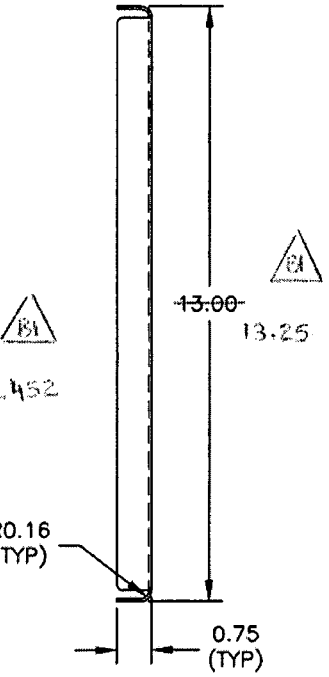
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3302	REV. B SHEET 2 OF 4
DATE 04.11.18		TITLE DOUBLER	SCALE 1:4

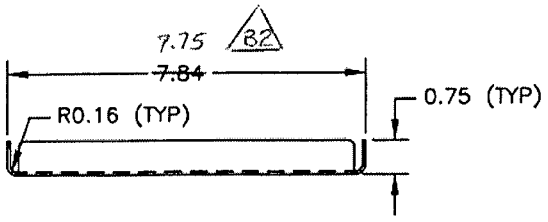
RELEASED
04.11.23



D3302-3 FLAT PATTERN



D3302-3 DOUBLER
BEND DETAIL



D3302-3 NOTES:

1) MATERIAL: 6061-T6 (QQ-A-250/11) 0.063 THICK (REF. DART SPEC. M6061T6S.063)
2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
3) BREAK ALL SHARP EDGES 0.005 TO 0.010
4) ALL DIMENSIONS ARE IN INCHES
5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
6) IDENTIFY WITH DART P/N & BATCH USING FINE POINT PERMANENT MARKER

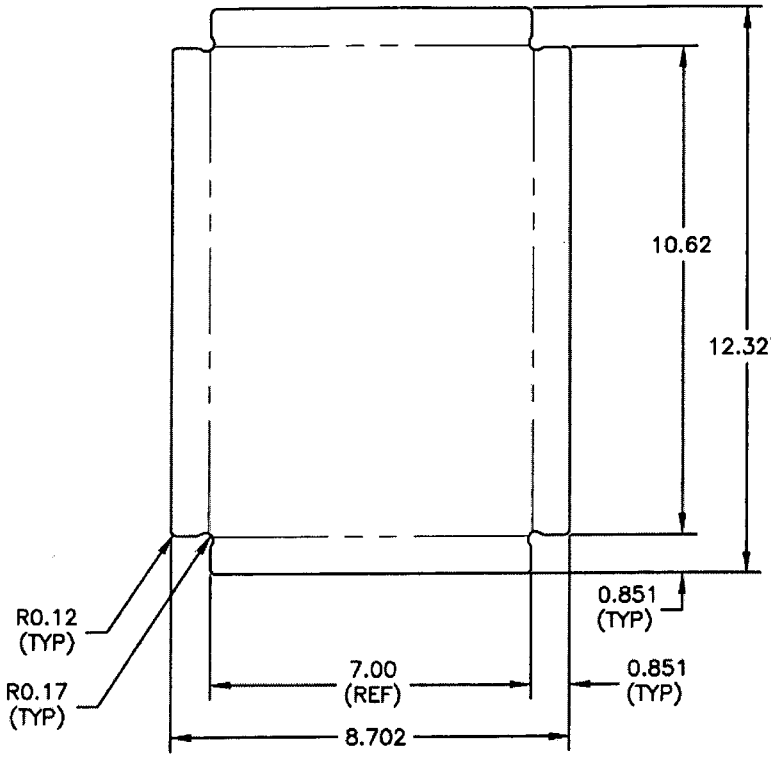
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 33269

Copyright © 2004 by DART AEROSPACE LTD

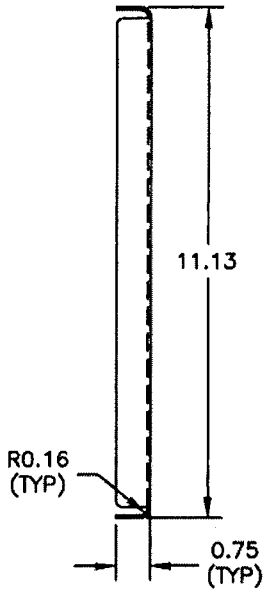
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3302	REV. B SHEET 3 OF 4
DATE 04.11.08		TITLE DOUBLER	SCALE 1:4

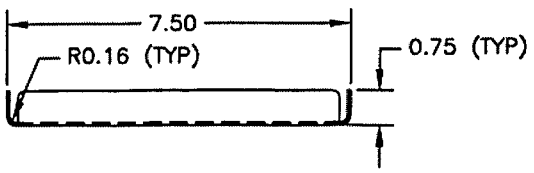
RELEASED
04.11.23



D3302-5 FLAT PATTERN



D3302-5 DOUBLER BEND DETAIL



D3302-5 NOTES:

1) MATERIAL: 6061-T6 (QQ-A-250/11) 0.063 THICK (REF. DART SPEC. M6061T6S.063)
2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
3) BREAK ALL SHARP EDGES 0.005 TO 0.010
4) ALL DIMENSIONS ARE IN INCHES
5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
6) IDENTIFY WITH DART P/N & B/N USING FINE POINT PERMANENT MARKER

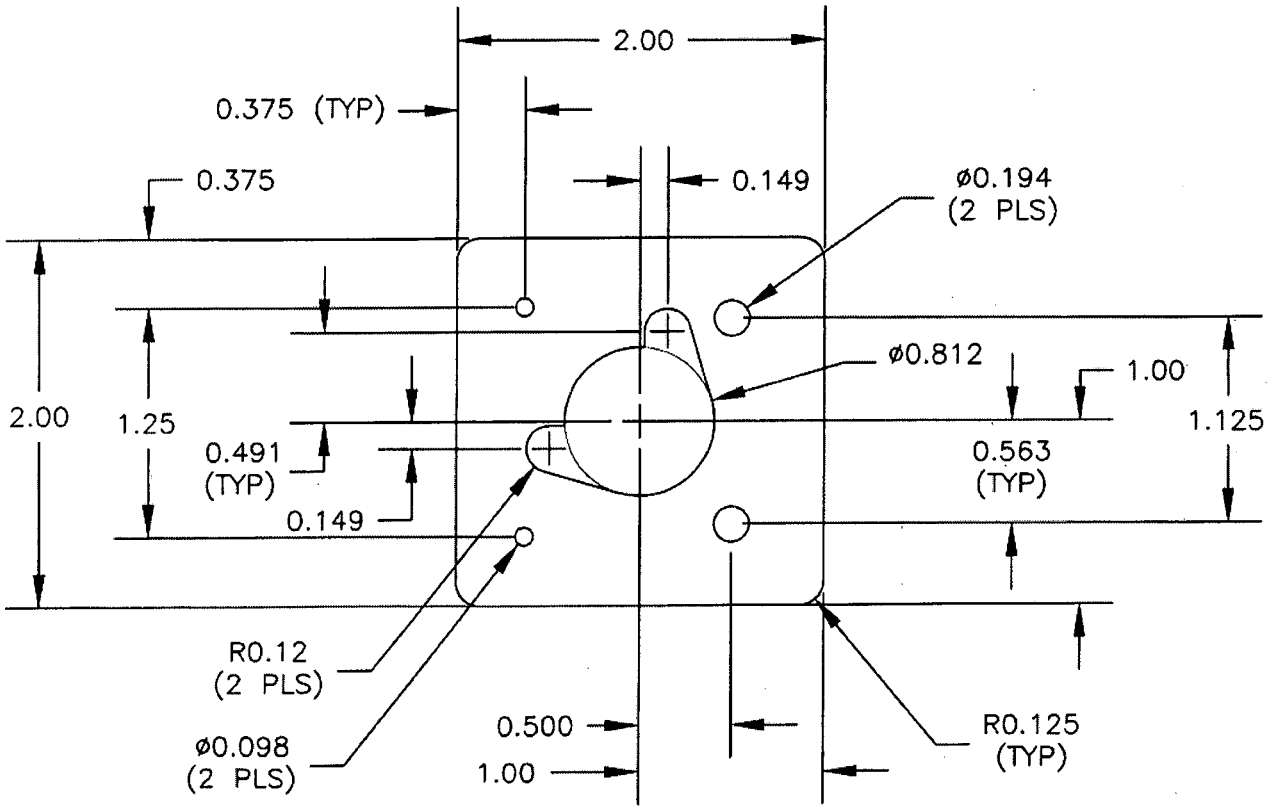
SHOP COPY
RETURN TO ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT WITHOUT NOTICE
WORK ORDER NO. 33069

Copyright © 2004 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3302	REV. B SHEET 4 OF 4
DATE 04.11.18		TITLE DOUBLER	SCALE 1:1

RELEASED
04.11.23



D3302-7

D3302-7 NOTES:

1) MATERIAL: 5052-H32 OR 6061-T6 (QQ-A-250/8 OR QQ-A-250/11) 0.040 THICK (REF. DART SPEC. M5052H32S.040)
2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
3) BREAK ALL SHARP EDGES 0.005 TO 0.010
4) ALL DIMENSIONS ARE IN INCHES
5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
6) IDENTIFY WITH DART P/N & B/N USING FINE POINT PERMANENT MARKER

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 32069

Copyright © 2004 by DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.